sequ nces by residues known to be equivalent with those residues can be effected to produce equivalent peptides having similar biological activities. Moreover, it is known that additional substitutions in the amino acid sequence generally throughout the C-terminal portion of the peptide, i.e. within about ⅓ of the length of the conotoxin nearest its C-terminus, can be effected in order to produce conotoxins having phylogenetic specificity; thus, such substitutions in

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SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i i i) NUMBER OF SEQUENCES: 13

(2) INFORMATION FOR SEQ ID NO:1:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 25 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(i i i) HYPOTHETICAL: NO

(i v) ANTI-SENSE: NO

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:1:

Gly	Cys	Cys	Gly	Ser	Tyr	Pro	Asn	Ala	Ala	Cys	His	Pro	Cys	Ser	Cys
1				5					10					15	
Lys	Asp	Arg	Xaa	Ser	Tyr	Cys	Gly	Gln							
			20					25							

(2) INFORMATION FOR SEQ ID NO:2:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 30 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Glu	Lys	Ser	Leu	Val	Pro	Ser	Val	Ile	Thr	Thr	Cys	Cys	Gly	Tyr	Asp
1				5					10					15	
Xaa	Gly	Thr	Met	Cys	Xaa	Xaa	Cys	Arg	Cys	Thr	Asn	Ser	Cys		
			20					25					30		

(2) INFORMATION FOR SEQ ID NO:3:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Cys	Cys	Gly	Val	Xaa	Asn	Ala	Ala	Cys	Pro	Xaa	Cys	Val	Cys	Asn	Lys
1				5					10					15	
Thr	Cys	Gly													

(2) INFORMATION FOR SEQ ID NO:4:

(i) SEQUENCE CHARACTERISTICS:

this region can be carried out to produce valuable equivalent structures. The C-terminus of many of the illustrated peptides is amidated, and the inclusion of a substituted amide at the C-terminus of such peptides, as described hereinbefore, is considered to create an equivalent conotoxin.

Particular features of the invention are emphasized in the claims which follow.

-continued

(A) LENGTH: 25 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:4:

```
Gly Cys Cys Gly Ser Tyr Xaa Asn Ala Ala Cys His Xaa Cys Ser Cys
1               5                   10                  15

Lys Asp Arg Xaa Ser Tyr Cys Gly Gln
            20                  25
```

(2) INFORMATION FOR SEQ ID NO:5:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 25 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:5:

```
Gly Cys Cys Gly Ser Tyr Xaa Asn Ala Ala Cys His Pro Cys Ser Cys
1               5                   10                  15

Lys Asp Arg Xaa Ser Tyr Cys Gly Gln
            20                  25
```

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 18 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:6:

```
Cys Cys Gly Val Xaa Asn Ala Ala Cys His Xaa Cys Val Cys Lys Asn
1               5                   10                  15

Thr Cys
```

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 46 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:7:

```
Gly Xaa Ser Phe Cys Lys Ala Asp Glu Lys Xaa Cys Glu Tyr His Ala
1               5                   10                  15

Asp Cys Cys Asn Cys Cys Leu Ser Gly Ile Cys Ala Xaa Ser Thr Asn
            20                  25                  30

Trp Ile Leu Pro Gly Cys Ser Thr Ser Ser Phe Phe Lys Ile
        35                  40                  45
```

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 19 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

-continued

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Gly Cys Cys Ser His Pro Ala Cys Ser Gly Lys Tyr Gln Xaa Tyr Cys
1 5 10 15

Arg Xaa Ser

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 23 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:9:

His Xaa Xaa Cys Cys Leu Tyr Gly Lys Cys Arg Arg Tyr Xaa Gly Cys
1 5 10 15

Ser Ser Ala Ser Cys Cys Gln
20

(2) INFORMATION FOR SEQ ID NO:10:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 27 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Cys Lys Thr Tyr Ser Lys Tyr Cys Xaa Ala Asp Ser Xaa Cys Cys Thr
1 5 10 15

Xaa Gln Cys Val Arg Ser Tyr Cys Thr Leu Phe
20 25

(2) INFORMATION FOR SEQ ID NO:11:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 35 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Ser Thr Ser Cys Met Glu Ala Gly Ser Tyr Cys Gly Ser Thr Thr Arg
1 5 10 15

Ile Cys Cys Gly Tyr Cys Ala Tyr Phe Gly Lys Lys Cys Ile Asp Tyr
20 25 30

Pro Ser Asn
35

(2) INFORMATION FOR SEQ ID NO:12:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 27 amino acids
(B) TYPE: amino acid
(D) TOPOLOGY: unknown

(i i) MOLECULE TYPE: peptide

(x i) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Gly Glu Xaa Xaa Val Ala Lys Met Ala Ala Xaa Leu Ala Arg Xaa Asn
1 5 10 15

Ile Ala Lys Gly Cys Lys Val Asn Cys Tyr Pro